CRYSTAL PEAK MINERALS CORPORATION

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December 29, 1988

Mr. Lowell Braxton, Administrator
Mineral Resource Development
and Reclamation Program
Division of Oil, Gas and Mining
Department of Natural Resources
State of Utah
355 West North Temple
3 Triad Center - Suite 350
Salt Lake City, Utah 84180-1203

Re: 1989 Mining Plan
Sevier Lake Project
Millard County, Utah

Dear Lowell:

Attached are three (3) copies of the 1989 Plan as submitted to the BLM. The Plan details planned construction and operational activities during 1989 on the unitized state and federal potassium leases. The submitted Plan is an amendment to the previous approved Plan (M/027/008, 5/2/88).

Reclamation of proposed pond system improvements to be constructed during 1989 is amply covered by the approved plan; that is, to intentionally flood the pond system upon the event of project closure. Reclamation of the plant site is an integral part of the Special Use Lease obtained from the State Land Board and the Division of State Lands and Forestry to be secured by bond prior to the commencement of construction to assure CPMC compliance with lease terms.

Please contact me if you have any questions or comments on the proposed Plan.

Sincerely yours,

Larry Sower

Larry Sower
General Manager

CRYSTAL PEAK MINERALS CORPORATION
SEVIER LAKE PROJECT
1989 MINING PLAN

Planned 1989 Development for:

Federal Potassium Leases U-37863 through U-37912

and

Utah State Potash Leases ML 34550 through ML 34563

December 28, 1989

cc: BLM State Office (3)
BLM Richfield District Office (1)
BLM Warm Springs Resource Area (1)
Utah Division of Oil, Gas, and Mining (1)
Utah Division of State Lands and Forestry (1)
Utah Bureau of Water Pollution Control (1)
Millard County (1)

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SUMMARY

The following report outlines planned construction and operational activities to occur at the Sevier Lake Project during 1989. The project is being developed by Crystal Peak Minerals Corporation (CPMC). The project is located in Millard County, Utah on lands covered by federal and state potassium leases held by CPMC. Other rights and property held by CPMC include unpatented mining claims, a special use lease from the State of Utah on the future plant site, private property at the railhead near Black Rock, surface and subsurface water appropriations, and a BLM right-of-way at the process water well. The federal and state potassium leases have been unitized under Unit Agreement approved by BLM and the State of Utah in 1988.

The 1989 Mining Plan ("Plan") is a partial plan as authorized by 43 CFR 3592.1(f). The early stages of the project are being permitted in this manner due to the long lead time required to bring the property into production and the need to assimilate ongoing research and engineering efforts into overall project planning. The report is written in a fashion to supplement the 1988 Mining Plan as approved. No major changes have evolved to date to the original development plan submitted to BLM in conjunction with issuance of the federal potassium leases effective January 1, 1988. All proposed actions described by the 1989 Mining Plan were specifically addressed by EA # UT-050-87-080 and appropriate stipulations included in the issued federal potassium leases.

This Plan provides for the continuing orderly development of potash and salt production facilities at Sevier Lake. Development of the project is based on the extraction of minerals from the complex brines contained in the bed of the lake. Major components of the overall project include means to extract brine from the lake clays, an extensive solar ponding system to crystallize the salts contained in the raw brine in a controlled fashion, and processing plants to produce high quality projects from the crude harvest salts. Construction items included in the Plan are a continuing development of brine collection ditches and pond system diking, a protective midlake dike, and construction of a salt wash and stockpile facility.

Operations planned for 1989 include a continuation of solar pond operations, routine dike and ditch maintenance, an initial sodium chloride harvest in the fall, and general support of the construction activities. Shipments of brine for dust suppression of unpaved roads should increase substantially during the year. The volume of salt shipments from the planned salt wash and stockpile facility will depend on the strength of the maturing salt floors in the pond complex.

It is anticipated that one additional partial plan will be submitted to permit 1990 construction and operations. A permanent plan should be completed by 1991 incorporating all development addressed by EA # UT-050-87-080. It is expected that the 1990 Plan will include a complete salt drying and packaging plant and completion of the solar pond complex. Construction and start-up of the potash plant is planned for 1991-92.

1989 Construction Plans

The following text outlines construction projects planned for 1989. Attached to the report are two figures and six construction prints that detail location, function, and design of 1989 construction projects.

ITEM #1 Temporary Rail Loadout Facility at Black Rock

A portable railcar loadout facility is planned at Black Rock. It will be used to load bulk open top railcars at the Black Rock siding of the Union Pacific Railroad on a temporary basis for approximately two years. Construction of a permanent railhead facility at Black Rock is planned for 1991.

The portable loading system scheduled for 1989 will consist of a truck hopper and conveyers as detailed in the construction drawings. The design utilizes custom designed truck trailers to avoid product spillage. Current sales projections estimate shipping up to 100,000 TPY of bulk salt by rail in 1990. The construction site is located entirely on private land owned by CPMC and the Union Pacific Railroad.

where are they?

ITEM #2 Road Improvement Project, Black Rock to CPMC Plant Site (Millard County)

Construction of an all weather gravel road connecting the CPMC plant site with Black Rock is scheduled by Millard County during 1989. The road will be situated along the current

alignment of the Black Rock - Garrison road, with the exception of a few minor changes required by safety considerations. The road improvement project is being financed through a cooperative arrangement between CPMC, Millard County and the State of Utah through the Community Impact Board. All of the improved road will be part of the Millard County road system. The planned improvements will be engineered and constructed under contracts administered by Millard County who will obtain all necessary rights-of-ways and permits.

ITEM #3 Salt Wash Plant and Product Stockpiles

The first processing plant to be built will be a facility designed to wash and stockpile crude sodium chloride (salt) harvested from the solar pond complex, the design of which is common to similar operations in the State of Utah. The wash plant is designed to produce commercial quality salt products for subsequent sales. In appearance and function the plant will be similar to a sand and gravel operation. The plant will be located in the S½ of Section 16, T 24 S, R 12 W SLM. CPMC holds Special Use Lease No. 752 from the Utah Division of State Lands and Forestry which was acquired specifically as the location for the planned processing plants.

Area maps and a set of detailed drawings of the facility are attached to this report. The site is immediately adjacent to the CPMC pond system on the south shore of Sevier Lake. The area is presently thinly covered by blow sand with very sparse salt

resistant vegetation. The blow sands are underlain by lake clays which are saturated with brine. Access to the site will be provided by the new county road (Item #2). The Utah Special Use Lease addresses reclamation and bonding requirements.

The area of the wash plant and stockpiles totals 22.6 acres. The area will be prepared by leveling the site with a laser guided scraper. A network of drainage pipes will then be installed to collect runoff and seepage in the plant area. The system is designed to collect and discharge all drainage back to the CPMC pond system. The drainage pipes will be covered with up to six inches of gravel fill to facilitate collection from the stockpiles. The fill will likely be supplied from a local commercial source. Construction of the wash plant and conveyer systems would commence after the earth work is complete. In operation the stockpile area would be covered with up to one foot of salt to insure product quality.

Harvest trucks would use existing pond dikes and the new county road to access an elevated truck hopper on the south perimeter of the facility. A conveyer would transfer the crude harvest to an intermediate stockpile adjacent to the wash plant. The salt must be washed to remove the interstitial brine from the crude harvest. Salt would be fed to the wash plant by use of mobile equipment and a second hopper. First stage washing would be accomplished by slurrying brine and crude salt in a rotating drum. Brine for this step would be pumped from the pond system. The slurry discharge would be dewatered on a steeply inclined

belt custom designed for this purpose. Brine would be discharged back to the pond system. The salt would be conveyed to a set of industrial screens for product sizing and a final rinse with process water. Process water for the plant would be supplied from the CPMC process water well. The two washed and sized products from the wash plant would be conveyed to radial stackers. The design capacity of each of the two stockpiles is 100,000 tons. Electrical power for the circuit will initially be supplied by a potable 500 kw generator powered by a diesel drive. Plans call for construction of a powerline into the plant site in 1990.

Salt shipments from the stockpiles will be by truck either to Black Rock for rail shipment or directly to customers.

ITEM #4 Process Water Line

A new process waterline will be built from the existing process water well to the plant site. A four inch line will be used to supply a maximum of 100 gpm of process water. The line will be buried to a depth of five feet. As shown in Figure 2 the alignment would run northwest from the well through parts of Sections 15, 16, and 22, T 24 S, R 12 W SLM. The total length of the proposed line is 3340 feet. Of the total distance 1460 feet is on state land and 1880 feet is located on federal lands administered by the BLM. A right-of-way for the line will be sought from BLM as an amendment to the existing right-of-way U-58555 on which the process water well is located. The proposed

right-of-way width is twenty feet to accommodate future additional water lines that may be required.

CPMC holds an approved application for 15 second-feet of groundwater in the project area (No. 69-63 A51181). Preliminary drawdown tests of the well by the United States Geological Survey indicate production rates of up to 500 gpm of water may be possible on a steady state basis. The performance of the well will be closely monitored to help engineer the number and spacing of additional wells required to support the expanding plant complex.

A potable water system is planned for construction in 1990.

ITEM #5 Potash Area Containment Dike

Construction of this dike was permitted under the 1988 Mining Plan. As shown on Figure 1 approximately five miles of the 12.8 miles permitted by the 1988 Plan will be completed early in 1989.

ITEM #6 Collection Ditch Extension

As with Item #5, extension of the brine collection ditch northward is an ongoing project. Approximately seven miles of ditch have been completed with permits in place to extend the system to a total length of seventeen miles. Planned construction during 1989 calls for a minimum extension of four miles. This will connect the brine collection system with the proposed Needlepoint Dike. Careful records of brine production from the

collection system are being maintained to aid in determining the actual extent of ditches required to sustain projected operations.

ITEM #7 Needlepoint Dike

The planned Needlepoint Dike is to be built to protect the pond complex from future lake flooding. The dike was originally proposed and permitted in 1986 near the height of the recent floods as a means to begin development on the lake. The rapid recession of the lake since 1986 has allowed CPMC to delay construction of the dike. With the lake now nearly dry, CPMC is proposing a more modest version of the dike. The 1986 proposal envisioned a structure built entirely of imported fill and protected from wave action with riprap. CPMC now proposes to build the dike with lake bed clays utilizing construction methods proved in construction of the solar pond dikes. Construction would commence in September 1989 on an eight month completion schedule. It is anticipated that the proposed alignment will be dry by next fall.

The dike will connect the east and west shores of Sevier Lake as depicted in Figure 1. The dike alignment is totally contained by the meander line of the lake. The length of the structure will be approximately 5.4 miles utilizing the N 40 W alignment as permitted in 1986. The base of the clay dike will likely vary from forty to fifty feet in width. The crest of the dike will be built to an elevation of 4525 feet above M.S.L..

The dike will be constructed by draglines working on large flotation mats. The adjacent borrow trenches will become part of the collection ditch system. Approximately six months after dike completion a high flotation cat will be used to push a road along the crest of the dike. The road will be used to facilitate future maintenance on the structure.

Access to the dike will be by two existing unimproved roads. On completion, the Needlepoint Dike could provide a means to greatly reduce travel time across the lake.

Reclamation of the proposed clay dike would be accomplished by the approved plan of flooding the pond system. Waters released by deliberate flooding of the pond system would flow north and be impounded by the dike. The planned volume would stack brines up to five foot deep along the southern face of the dike. Wave action inherent with this depth caused by the prevailing wind pattern would quickly destroy the dike. When and if the dike is capped and armored the reclamation plan will need to allow for the physical destruction of the dike by heavy equipment or the assumption of the causeway by the BLM or county as part of a road system.

1989 OPERATIONS

Field Operations

Pond operations during 1989 are a continuation of the 1988 Plan concentrating on building salt floors in the existing salt ponds and the new potash area. Brine pumped from the collection ditches will be used to cover the pond system.

Some routine maintenance work will be required to repair erosional damage to existing dikes and ditches.

The first salt harvest is projected for the fall of 1989. Plans are to take a two inch cut from Pond 6. This should yield approximately 50,000 tons of crude salt. The salt will be used for start-up of the new salt wash plant and provide sufficient product for initial sales to selected customers.

Technical Development

Technical development planned for 1989 includes continued operations of the test ponds, offsite operation of a potassium sulfate pilot plant at an established research facility to be selected and final design engineering on the potash ponds and salt plant.

Marketing Development

CPMC has been engaged in a comprehensive market study on salt products. This should be completed by February 1989. A market study on potassium sulfate specific to CPMC should be complete by late 1989. Direct sales efforts on salt and brine products are proceeding as planned.

GOVERNMENTAL PERMITTING

Millard County

On approval of the Plan by BLM and other agencies CPMC will proceed to obtain required building permits from Millard County.

The Plan as submitted is consistent with the Conditional Use Permit granted to CPMC by Millard County covering the Sevier Lake Project.

Employment generated by the project should reach twenty fulltime positions by the end of 1989. In addition, up to forty temporary construction workers will be needed during the spring and summer months primarily on road and plant construction projects. Construction housing will not be permitted onsite. All employees will be required to commute to their jobs from surrounding communities.

Reclamation

Reclamation of all planned 1989 construction activities on the lake bed are adequately addressed in the 1988 permit and reclamation plan and approved by BLM and the Utah Division of Oil, Gas and Mining. That approved plan calls for the deliberate destruction of project works on the lake surface by sequential flooding.

Reclamation planning for the plant site and bonding requirements are addressed in the State of Utah Special Use Lease.

Reclamation requirements of the proposed water line right-of-way to be obtained from the BLM will be handled as an integral part of the requested action.

The Millard County road is a permanent part of the county road system. No action is required.

The planned temporary rail loadout site at Black Rock

utilizes a developed siding on the Union Pacific Railroad. No new surface disturbances are planned at the site.

Water Pollution Control

A careful analysis of the proposed plan negates that any pollution of either surface or groundwater would occur as a result of planned operations. Previously submitted analysis of subsurface groundwater in the lake basin demonstrate the entire aquifer to be briny. The remnant lake is now saturated in respect to both sodium chloride and sodium sulfate. A USGS hydrological report now in draft stage on the lake basin documents extremely low transmissivities for the clay structures surrounding the lake. Supporting the contention that there is little hydrological connection between the lake basin and surrounding process water aquifers is that the brine aquifer is actually perched higher than surrounding aquifers on the east and south sides of the lake. The project as planned simply manipulates the natural process of evaporation to produce mineral products contained within the raw brine. The process as employed adds nothing to the system which is not present in the raw brine. The system is designed as a zero discharge process in which all plant discharges are returned to the pond system.

CPMC will closely monitor the hydrostatic level and quality of water pumped from its process water well. Data from the well will be used to plan the future expansion of a well field to meet the water requirements of the project.

CPMC will continue to supply the Bureau of Water Pollution Control with future development plans as the project develops. A complete baseline study of the Sevier Lake Basin prepared by the United States Geological Survey is now in draft form and should be published early in 1989.

Air Pollution Control

The 1989 Mining Plan does not include the construction of any point sources requiring control permits. Lease stipulations regarding dust suppression on unpaved roads will be met.

Wastes

CPMC does not generate or use any hazardous materials as defined by current regulations. Used oils and greases are removed to an approved recycling firm. Sanitary wastes are hauled offsite to licensed county landfills. Commercial self-contained toilets are provided for the employees and are serviced on a regular basis by a licensed contractor.

Survey

All construction sites above the meander line of the lake have been surveyed and marked. Lake bed alignments will be marked only if necessary due to severe access problems.

REFERENCES

1. 1988 Mining Plan, Crystal Peak Minerals Corporation; 12/87. Report to BLM and other agencies.

2. EA # UT-050-87-080, W. D. Haden Development Plan for Sevier Lake; Bureau of Land Management; 9/87.

3. Special Use Lease No. 752; Division of State Lands and Forestry; 3/88.

4. BLM Right-of-Way Grant #U-58555; Warm Springs Resource Area; 2/88.

5. Application Number 69-74 (A 61210), Surface Water Appropriation; Utah State Engineer; 6/88.

6. Application Number 69-63 (A 51181), Subsurface Water Appropriation; Utah State Engineer; 6/88.

7. Hydrologic System of the Sevier Lake Area, West Central Utah (Draft); US Geological Survey; 1988.

8. Unit Agreement for the Development, Operation and Production of Brines from the Sevier Lake Unit Area; BLM, CPMC, State of Utah; 8/88.

9. Potassium Leases U-37863 through U-37912; Bureau of Land Management; 1/88.

10. Conditional Use Permit for Crystal Peak Minerals; Millard County; 6/87.

11. Mining and Reclamation Plan Amendment, 1988 Mining Plan; Crystal Peak Minerals; 3/88.